

**MARINE MAMMAL BEHAVIORAL DISTURBANCE
(MMBD) WORKING GROUP
Perot Systems — 9:00 AM to 4:30 PM
17 November 2003**

MEETING SUMMARY

ACTION: In the event that a WG member cannot attend, it was collectively decided that each member can designate one person as their Alternate. Names of the designated alternate will be provided to Ward no later than Monday December 1, 2003.

ACTION: The agenda for the following meetings will be posted on the Internet and distributed to all working group members at least one week prior to the meeting.

ACTION: Ward will word-smith the goal statement for final approval by the WG.

ACTION: Brian Hopper and Dana Hartley will provide copies of documents relating to over flights (regarding marine mammals) as well as any additional NMSF regulations relating to the above table.

ACTION: Nathalie and Jen Collier will provide approach regulations and website information. These regulations differ with each region.

ACTION: Henry McCarthy will contact spotter pilots and/or a FAA representative to gather information on the number and frequency of flights over the SBNMS.

ACTION: Nathalie Ward will review Dave Wiley's paper on habitat use and pull out any data that may be useful.

ACTION: The schedule for WG meetings is as follows:

December 8 th :	Address: Whale Watching and Aerial Over flights
January 22 nd :	Address: Fishing, Commercial Shipping, and Acoustics
February 12 th :	Remaining Issues and Review
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ACTION: Direct any questions on fishing to Nathalie Ward and she will pass on the information to Henry McCarthy.

ACTION: Brian Hopper and Dana Hartley will look up information about the number of whale watch boats operating in the SBNMS and existing regulations pertaining to whale watch boats and tuna spotters.

MARINE MAMMAL BEHAVIORAL DISTURBANCE

Working Group Attendees

NAME	WG SEAT and AFFILIATION
Regina Asmutis	Chair: SAC
Nathalie Ward	Team Lead: SBNMS
Dave Slocum	Whale Watching (NEAq)
Henry McCarthy	Tuna Fishing
Sharon Young	Conservation (HSUS)
Erin Heskett (Alternate)	Conservation (IFAW)
Dana Hartley	NMFS
Brian Hopper	NMFS/NER
Kim Amaral	Academic (WHOI)
Peter Scheifel	Academic (UCONN)

Technical Advisor

Peter Tyack

WHOI

Working Group Members Not Present

Scott MacNeil

Carole Carlson

Jack Kent

Commercial Shipping

Conservation (IFAW)

Recreational Boating

Others Present

Deborah Marx (rapporteur)

Jen Collier (rapporteur)r

Craig MacDonald

Ben Cowie-Hasekll

Kate Van Dine

Scott Cramer

SBNMS

URI

SBNMS Superintendent

SBNMS Staff

SBNMS Staff

WHOI

WELCOME, INTRODUCTIONS, ADOPTION OF ADGENDA, AND COMPENDIUM

Craig MacDonald, SBNMS Superintendent, welcomed all the members of the Marine Mammal Behavioral Disturbance (MMBD) working group and thanked them for their support in the MPR process. Nathalie Ward gave an overview of the meeting agenda and reviewed the Compendium.

SBNMS WORKING GROUP PROCESS

Nathalie Ward provided a summary of the Stellwagen Bank National Marine Sanctuary (SBNMS) working group (WG) process in relation to the National Marine Sanctuary Program's (NMSP) Management Plan Review (MPR). (See schematic.) She stated that she would present National Marine Sanctuary Program's (NMSP) position on the issues to ensure that an unbiased outcome occur throughout the process.

She stated that problem statements were drafted based on the public scoping comments and those comments are based on the public's conception of what the problems are, not necessarily the true problems. Ward spoke about the working group process and the roles of the working group members. She explained to the group that there are 13 National Marine Sanctuaries and the SBNMS has a dual goal of resource protection and compatible use.

The National Marine Sanctuary Program (NMSP) mandates a MPR every five years to develop a Management Plan that guides the objectives, policies and activities of the sanctuary. The Stellwagen Bank's Sanctuary Advisor Council (SAC), made up of 21 members representing various stakeholder groups, citizen's at-large, and federal and state partners (15 voting members) provides advice to the Superintendent regarding the MPR.

The initiation of the MPR began in 2002 with 1) a public scoping process, wherein public comments were gathered regarding issues of concern; 2) the comments were categorized by SBNMS staff and presented to the SAC (see Terms of Reference document, "Summary of Scoping Comments"; and, 3) the SAC prioritized the "scoped" issues and suggested the formation of 12 working groups.

The working groups of the SAC review the scoped issues, attending to the question if they are real and/or perceived, provide input concerning additional issues, and then develop an issue-specific Action Plan (AP). The AP is an in-depth characterization and evaluation of the issues with specific recommendations address issues and implement strategies. The MMBD AP is given to the SAC for review and comment; the SAC provides recommendations to the Superintendent. The SBNMS staff prepares the Draft Management Plan (DMP) which is open to a public review process. The public's comments are incorporated, given to the SAC with final comments, and provided to the Superintendent for final review with a resulting Final Management Plan (FMP). This process is scheduled for completion in 2005.

ROLES AND RESPONSIBILITIES OF THE WORKING GROUP

Ward discussed working group formation and various WG roles

- *Members* were chosen from over 400 nominations representing @ 190 individuals on 12 WGs. Working group members represent constituents, and in that capacity serve as conduits for an information exchange from their constituents to WG discussions.
- The *Working Group* is made up of a diverse group of individuals chosen because of their ability to respect diverse points of view, and their knowledge of regional marine resources and management issues. As importantly, It is a discussion between members of the working group and the constituents they represent.
- The *Team Lead's* (SBNMS staff) role is to work closely with the Chair to guide an equitable process and to serve as logistical support including providing background material, agenda, minutes, etc. She/he participates in the process as a stakeholder providing advice on the NMSP's position, views and policies.
- The *Chair*, a member of the SAC, is the meeting administrator and facilitator. The Chair solicits the interests and concerns of the WG, assures that all voices are heard, and guides the fairness of the WG process. If the Chair has an interest that has not been voiced through another member, the Chair must recuse herself from her position as Chair before speaking to her particular interest.
- The *Public* is invited to participate as observers. but they must convey their concerns through one of the members of the working group, not directly to the entire group.
- *Alternates* for members can be appointed. Appointment of Alternates is a decision for the WG.
- *Technical Advisors* are individuals with expertise related to the priority issues. Advisors are encouraged to make recommendations and participate in discussions but shall not participate in WG decisions.

DECISION MAKING

- The WG will strive to reach decisions as a group by general agreement. If unable to support agreement, a member must demonstrate the importance of that issue and provide written rationale for subsequent recommendation. A definitive record must be kept of all recommendations of the WG.
- In the event of significant disagreements, the WG will work in consultation with a facilitator.

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COMPENDIUM

Ward provided members with Compendium (notebook binder) that contains:

- *Terms of Reference* document which includes:
 - a general outline of the MPR policies and WG purposes;
 - a summary of the scoping documents; the problem statements for all working groups;
 - the National Marine Sanctuary Act; and,
 - MPR Talking Points (generic communication talking points such as what is a National Marine Sanctuary, how it was established, etc.).
- *Agendas, Minutes, Participants Address List*
- *Reference Materials:* Issues of Concern including Whale Watching, Fishing Activity, Overflight Harassment, and Noise Impacts

ISSUES OF CONCERN: MARINE MAMMEL BEHAVIORAL DISTURBANCES

Presentation by Peter Tyack, Technical Advisor (WHOI)

PART I

Peter Tyack discussed the problems with defining and monitoring harassment, the changes in the definition due to the DOD exemptions, presented data regarding ocean noise levels with attention to concerns for marine mammals, and made suggestions regarding the Sanctuary's role re: policy and research.

- The dominant source of noise is vessel noise. Vessel noise, however, is not recognized by legislative bodies and therefore not addressed by NMSF, even though there is a shipping channel running through the SBNMS. The most important issue that needs to be addressed is the cumulative impact of vessel noise on marine mammals. Steps need to be taken (and a protocol set up) by the SBNMS to monitor vessel numbers and concurrent noise to learn about the effects man-made noises have on marine mammals.
- Tyack presented a summary of the Marine Mammal Protection Act (1972). He addressed the varying levels of noise impacts on humans (e.g., temporary to permanent hearing loss) and its relation to studying impacts on marine mammals. A study of captured marine mammals demonstrated that peak pressure and duration are important not just the peak pressure alone. A chart was displayed showing examples of manmade noises in the sea such as explosions, air guns, sonar (more specifically depth sounders, fish finders and various frequencies of

sonars), aircraft noise, and vessel noise. He emphasized that cumulative impacts need to be studied to understand repeated and multiple exposure over time.

- Concerns with noise are not necessarily the decibel (dB) level but the duration of the noise. Three things to consider regarding noise are the intensity of the sound, duration of exposure, and frequency of the sound. Additionally, depth plays a considerable role in noise transmission.

Manmade Sources of Noise in the Sea – insert chart?

- The major noise issue for SBNMS is vessels. Of vessel noise, 90% is created by humans, from a large number continuous source with a broad frequency, and causes disturbance behaviors. SBNMS needs a baseline monitoring study to include sources and distribution of noises and number/type/seasonality of vessels in the Sanctuary. Additionally, it is critical to look at activities *outside* of Sanctuary boundaries as potential impacts on SBNMS.
- SBNMS is not fostering research studies because it is so regulated by other bodies.

QUESTIONS/ANSWERS

In response to Tyack's presentation, the following questions were posed:

Q. Is it difficult to identify specific areas to place monitoring stations?

Q. Acknowledging that there are limited resources, is there a "single or best" place to mount an underwater listening device?

Q. How does fishing/dragging disrupt monitoring stations?

Q. Are there behavioral differences between small and large vessels?

Q. Does speed of vessels impact the amount of noise?

A. Tyack indicated that speed of the vessel was not necessarily the important factor, rather the speed at which the vessel cavitates – forms bubbles — which increases the noise level. Not really.

Q. Is there a different response based on what animal is doing (mating, feeding, etc.)?

Q. The role of the SBNMS influences other organizations .What can the SBNMS do?

A. Not be critical, lead by example, offer constructive collaboration.

Q. Does the geographic nature of the SBNMS focus noise?

A. Need to do computer modeling.

TYACKS'S RECOMMENDATIONS

- *Issues of Harassment:* Harassment should be viewed as the cumulative impacts of multiple vessels over time, not as individual takes.
- *Monitoring Noise Study:* Establish a baseline noise quotient in the Sanctuary. The intensity, duration of exposure measured, and frequency are all factors in considering what type of monitoring devices the SBNMS needs.
- *Humpback whale study:* No study on humpbacks. Need a tagging program. Very easy to monitor. Tags and the labor needs of monitoring should be shared with partners
- *Geographic sampling:* SBNMS should study other geographic areas and monitor at odd times to get a representative sample.
- *Partnerships:* Suggested that partnering with various entities would be cost/time efficient including:
 - Coast Guard to use their buoys would be cost/time efficient
 - Chris Clark at Cornell is placing monitoring stations in SBNMS already
 - Elena McCarthy's work in the Ligurian Sea as a potential partner
- *Additional Research:* While monitoring SBNMS, it is important that the Sanctuary sponsor research that look at various levels of effects (after monitoring is started)

PART II

Tyack discussed the definition(s) of harassment. Level A harassment is concerned with potential for injury, whereas Level B harassment refers to changes in behavior. Level B harassment may be more significant (than injury to an individual), as it could impact the population. To date, Level B is considered less detrimental, however.

The 1994 National Academy of Science (NAS) report states that human activity causes an adverse affect on the well-being of individuals or potentially a population, and a subtle or brief reaction is likely to have no impact. Different users have different regulations and permitting. Need to develop a consistent regulatory mechanism for all activities (including shipping) to level the playing field. Need research to define the criteria for definition of harassment.

Potential Biological Removal (PBR) is currently defined within the Marine Mammal Protection Act (MMPA) but it is not an accurate assessment as only fishery takes are calculated. A new mechanism to assess PBR needs to be established.

The Defense Authorization Bill defines Level B harassment (see handout in binder). This definition lacks clarity and leads to extensive problems in terms of interpretation.

Q. Should the SBNMS define terms in the terms of NOAA's function and goals?

A. Don't Go There!

GOAL OF WORKING GROUP

The following WG Goal Statement was developed:

The overall goal of the working group is to devise a framework to present to the SAC, for assessing and minimizing behavioral disturbances, due to anthropogenic sources, to marine mammals, and further, to foster cooperation and make further recommendations with cross-jurisdictional partners that affect those living marine resources.

ACTION: Ward will word-smith the goal statement for final approval by the WG.

MMBD PROBLEM STATEMENTS and PRIORITIZATION OF ISSUES

Ward posed the following questions to the WG:

- Have the problem statements been addressed?
- What are the other issues that have not been addressed by public scoping?

There was general agreement that marine mammal disturbances caused by anthropogenic factors could be divided into physical and noise disturbances. Other classifications not outlined by public concerns included possible biological and/or toxic/chemical disturbances. After much discussion, the working group divided disturbances into primary, secondary and emerging disturbances to include but not limited to the following:

Primary disturbances

- commercial shipping
- commercial whale watching
- fishing
- recreational boaters
- aircraft

Primary disturbance activities may include ferries, commercial shipping, commercial whale watching, fishing, recreational boating (e.g., motor boats, kayaks, jet skis), aircraft and shadowing effects (e.g., airplanes, helicopters, blimps), research vessel and equipment (e.g., ROV, sonar, submarines).

Secondary disturbances

- entanglement
- habitat characterization/impacts
- prey based issues
- chemicals/pollution
- ocean dumping/landfill
- mariculture

Emerging Disturbance Activities

Dive Boats (Charter and Private)
Military Vessels

High Speed Ferries
Marine Construction (e.g., Wind Farms)

Ward noted that discussions regarding many secondary and emerging disturbances would be attended to in other SAC WGs. It was suggested that turtles and seabirds must also be addressed somewhere in the WG process. However, it was important to track these concerns throughout the WG process.

ACTION: Nathalie Ward will communicate issues that cross the boundaries of other working groups such as water quality affecting the behavior of marine mammals.

Enforcement Issues

It was noted tht the WG must consier enforcement issues in the AP recommendations. The question was raised, “What capacity does SBNMS have to enforce regulations?” This discussion with a Technical Advisor was tabled for a later date.

Definition: Behavioral Disturbance

The WG indicated that the operational definition of ‘behavioral disturbance’ would be the definition of harassment.

In order to prioritize issues, the WG developed a matrix in order to ensure that priority issues were covered during the subsequent four meetings of the WG. (See matrix at end of Minutes document).

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NEXT STEPS AND SUMMARY

Regina Asmutis presented a summary of the issues. There will be no technical advisor for the next meeting.

MATRIX: ISSUES, MEETING DATES AND RECOMMENDATIONS

Issue and Meeting Date	Physical	Noise	Concerns	Research	Recommendations	Regs/Mgt.
Whale Watching (Commercial & Rec) December 8	Yes	Yes	Yes	Yes	Need Tech Advisor	MMPA) ESA WW Guidelines Eg Regs No SBNMS specific regs
Overflights December 8	?	Yes	?	Yes	Need Tech Advisor -Put Rightwhale Approach Guidelines in FAA Regs	FAA Regs NOAA Aerial Survey Guidelines
Acoustics Fishing (Commercial, Recreational, and Head Boat) January 22	Yes	Yes	Yes	Yes	Industry Rep. Wiley's paper Determine difference b/t commercial and recreational	FMPs TRPs MSR Eg Reg
Commercial Shipping January 22	Yes	Yes	Yes	Yes	Tech Advisor: (Pat Gerrior or Dave Wiley)	
Acoustics February 12		Yes	Yes			
Research Recreation Diving Emerging Issues February 12						

Marine Mammal Behavioral Disturbance Working Group

AGENDA

17 November 2003 TPMC—Scituate, MA
9:00 A.M. to 4:30 P.M.

- 9:00 – 9:30 Welcome, Introductions, Adoption of Agenda, and Compendium
- 9:30 – 10:00 SBNMS Working Group Process
Ground Rules
- 10:00 – 11:30 *Issues of Concern: Marine Mammal Behavioral Disturbance*
(Technical Advisor: Peter Tyack)
Discussion
- 11: 30 – 12:30 MMBD Problem Statements: “Issues of Concern”

Whale Watching
Fishing Activities
Overflight Disturbance
Noise Disturbance
- 12:30 – 1:15 *Lunch*
- 1:15- 3:15 Issues of Concern: Discussion Continued

Physical Disturbance: Vessels in the Vicinity of Whales
Commercial Shipping
Commercial Whale Watching
Fishing (e.g., recreational, sport, commercial)
Recreational (e.g., motor vessels, personal watercraft)
Aircraft (e.g., planes, helicopters, blimps)

\ *Noise Disturbance*
- 3:15 *Coffee Break*
- 3:30 – 4:00 W.G. Logistics: Meeting Mechanics and Dates , Technical Advisors, References
- 4:00 – 4:30 Next Steps and Summary
- 4:30 Adjourn